

REDESCRIPTION OF *HETEROCARPUS LAEVIS*
A. MILNE EDWARDS
(CRUSTACEA: DECAPODA: PANDALIDAE)

Brian Kensley and William Tobias

Abstract.—*Heterocarpus laevis* was figured by A. Milne Edwards in 1883, based on material from Martinique. One other specimen has been recorded from off the Cayman islands. No written description was provided, and the species has not been recorded since. Based on fresh material from St. Croix, U.S. Virgin Islands, the species is figured and redescribed. *Heterocarpus laevis* is unique in this genus, for lacking lateral carapace carinae.

A deepwater shrimp trapping survey was conducted by the second author at selected sites off St. Croix, U.S. Virgin Islands, in August 1982, as part of the Virgin Islands Fishery Development and Demonstration Project.

Twenty-four hour-sets were made with polyethylene traps (Fathoms Plus, San Diego, California), 73 cm wide by 87 cm long by 30 cm high, baited with blue runner (*Caranx crysos*). Trap mesh size was reduced to 1.3 cm with an internal plastic netting. Each set consisted of six traps spaced at 20 m intervals with 5 kg weights before the first and after the last trap.

Several deepwater shrimps and other invertebrate species were obtained from a depth of 460 m in the Salt River Canyon, off the north coast of St. Croix. These specimens were submitted to the first author for identification. Among these were six specimens which proved to be *Heterocarpus laevis*.

In April 1883, Alphonse Milne Edwards published a set of 44 plates of new or rare crustaceans from various sources, including the *Blake*, and *Travailleur* and *Talisman* expeditions. Among these was *Heterocarpus laevis*, taken by the Blake Expedition in 169 fathoms (309 m) off Martinique in the Caribbean Sea. The plate included a lateral view of an entire animal, plus enlarged figures of the first antenna, the antennal scaphocerite, and the shorter pereopod 2. No written description was published. Faxon (1896) recorded a second specimen, taken by the *Blake* Expedition from 297 fathoms (543 m) off Cayman Brac in the Cayman islands. This lack of description and rarity of records prompted the present paper.

Family Pandalidae

Genus *Heterocarpus* A. Milne Edwards
Heterocarpus laevis A. Milne Edwards, 1883
Figs. 1-3

Heterocarpus laevis A. Milne Edwards, 1883 [unnumbered plate, no. 28 in sequence].—Faxon, 1896:161.—De Man, 1920:109.

Material.—Salt River Canyon, St. Croix, U.S. Virgin Islands, 460 m, coll. W. J. Tobias, 19 Aug 1982, sample #004.

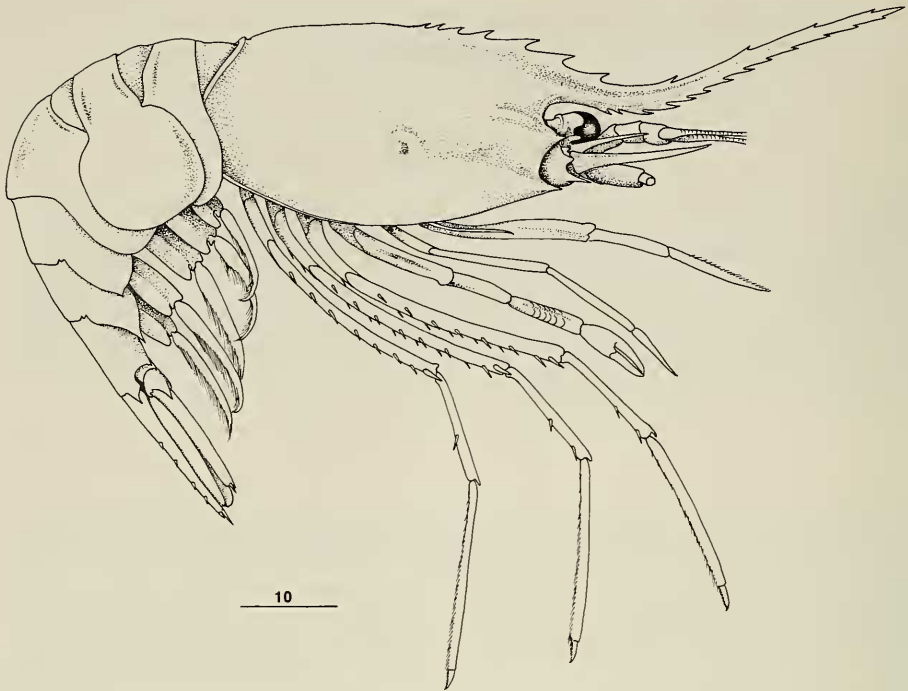


Fig. 1. *Heterocarpus laevis*: Male in lateral view. Scale in mm.

	Carapace length	Rostral length	Abdominal length	Rostral formula
♂	31.4	35.9	54.5	13/13
♂	31.9	33.5	54.0	11/12
♀	29.9	—	55.5	—
♀	30.2	37.0	56.0	12/12
♀	30.6	38.8	55.0	13/12
♀	33.3	39.9	59.9	12/13

Description.—Rostrum $\frac{1}{5}$ – $\frac{1}{7}$ longer than carapace, directed oblique-dorsally, with lateral carina in basal $\frac{1}{3}$ – $\frac{1}{2}$, with 12–13 ventral teeth almost reaching apex; with 11–13 dorsal teeth extending almost to apex, including 6 or 7 teeth posterior to orbital margin. Carapace with middorsal carina becoming obsolete in posterior $\frac{1}{5}$; strong antennal spine barely overreaching strong branchiostegal spine, both spines with obscure rounded buttress; carapace lacking lateral carinae; rostral base and anterior carapace around antennal and branchiostegal spines finely pubescent, hairs short, almost scale-like.

Abdominal somites 1 and 2 dorsally rounded; somite 3 with middorsal elongate raised area, but not forming true carina; somites 4–6 dorsally rounded. Pleura 1–3 ventrally rounded; pleuron 4 with small posteroventral tooth; pleuron 5 posteroventrally produced into acute spine; somite $6\frac{3}{5}$ length of telson.

Telson (Fig. 3b) with broad shallow middorsal groove becoming obsolete pos-

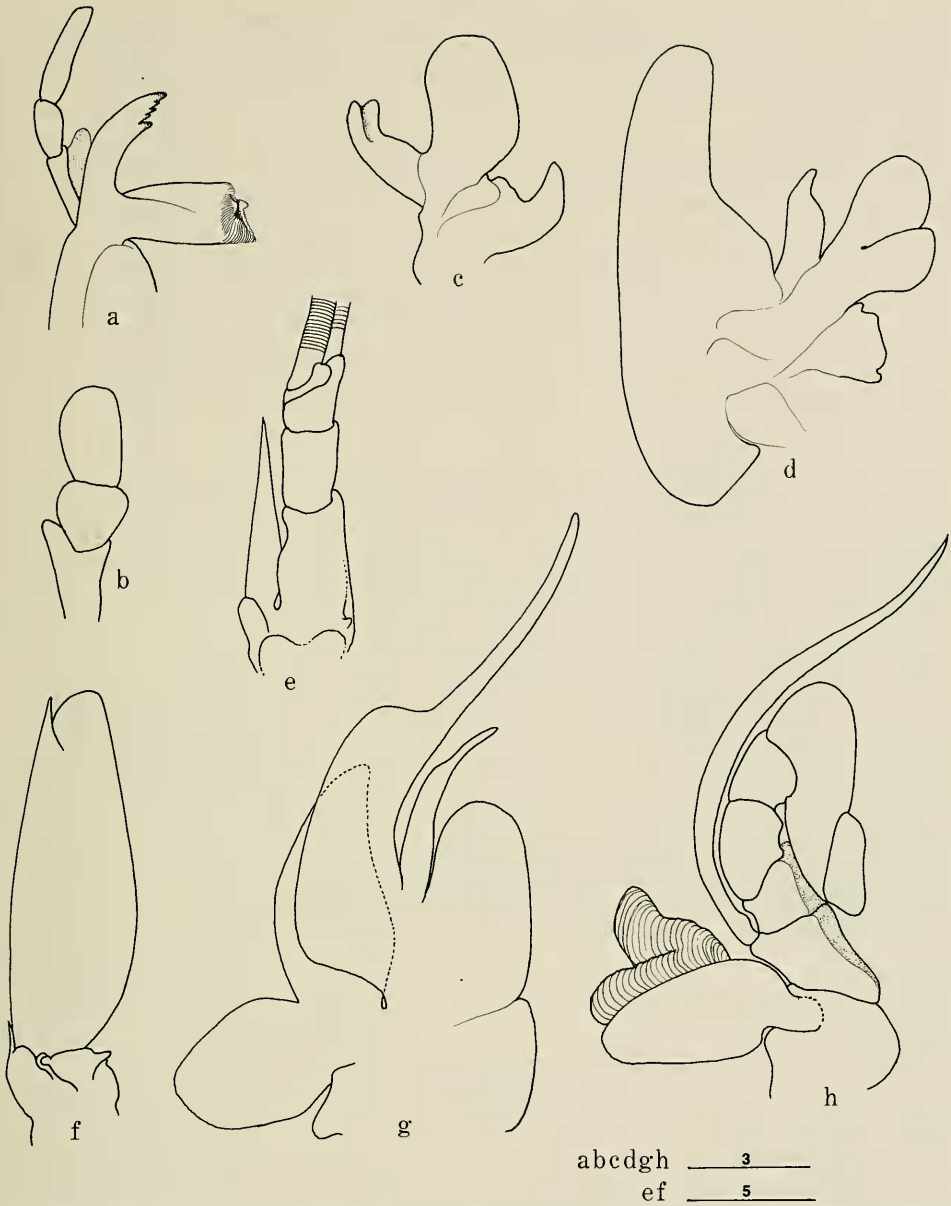


Fig. 2. *Heterocarpus laevis*: a, Mandible; b, Mandibular palp; c, Maxilla 1; d, Maxilla 2; e, Antenna 1 peduncle; f, Antennal scaphocerite; g, Maxilliped 1; h, Maxilliped 2. Scales in mm.

teriorly; 5 pairs dorsal spinules; posterior margin acutely triangular, with 2 pairs elongate spines internal to last of dorsal spinules.

Eyes with spherical cornea much broader than stalk; ocellus lacking. Antenna 1, (Fig. 2e) stylocerite elongate-slender, reaching at least to midlength of external margin of 3rd peduncle article. Antenna 2, scaphocerite blade (Fig. 2f) just overreaching distolateral spine; distal margin broadly rounded. Mouthparts as figured.

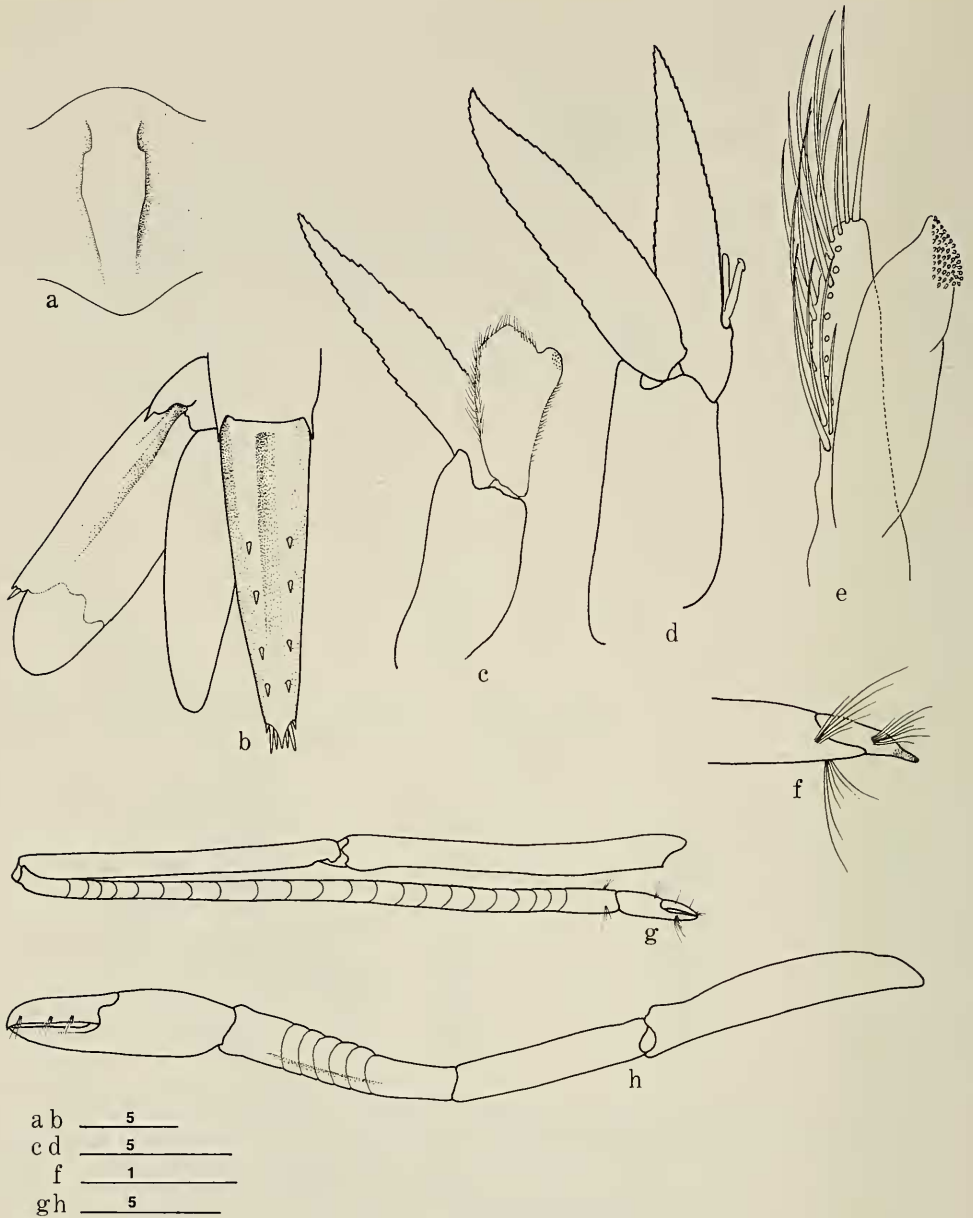


Fig. 3. *Heterocarpus laevis*: a, Abdominal somite 3 in dorsal view; b, Telson and left uropod; c, Male, pleopod 1; d, Male, pleopod 2; e, Appendix masculina and appendix interna, further enlarged; f, Chela of pereopod 1; g, Longer pereopod 2; h, Shorter pereopod 2. Scales in mm.

Mandibular palp, (Fig. 2a, b) basal article lobed at inner distal angle; 2nd article broad, about $\frac{2}{3}$ length of 3rd article. Maxilliped 2, (Fig. 2h) terminal article of endopod twice wider than long, set obliquely on penultimate article. Maxilliped 3 overreaching scaphocerite by half of terminal article; latter armed with rows of short spines, tipped with small corneous spine.

Pereopods 1–4 with strap-shaped epipods. Pereopod 1 reaching just beyond scaphocerite; dactylus (Fig. 3f) less than 1 mm in length, set obliquely on propodal apex, with single apical spine; propodus basally broader than distally, with rows of setae on proximomesial surface, $\frac{2}{3}$ length of carpus; latter only slightly shorter than merus; ischium with row of 8 or 9 short spines on posterodistal margin. Pereopod 2, shorter leg reaching distal $\frac{2}{3}$ of scaphocerite; chela subequal to carpus in length, fingers with entire cutting edges, subequal to palm in length; carpus of 6 or 7 articles, proximal and distal articles longer than intervening 4 or 5 subequal articles; ischium with carinate posterior margin; longer leg overreaching scaphocerite by chela and distal $\frac{1}{3}$ of carpus; latter of 20–23 articles, subequal in length to merus and ischium together. Pereopod 3 extending beyond scaphocerite by length of dactylus and propodus; dactylus $\frac{1}{7}$ length of propodus, with 5 spines on posterior margin; propodus bearing short scattered spines on posterior surface; carpus with strong spine near laterodistal margin, another just distal to midlength, 14–16 short irregularly spaced spines on mesial and posterior surfaces; merus with 8 or 9 large lateral spines, 7 large mesial spines; ischium with 2 spines on posterior surface. Pereopod 4 overreaching scaphocerite by dactylus and $\frac{5}{6}$ of propodus; dactylus $\frac{1}{8}$ length of propodus; carpus with 1 or 2 strong posterolateral spines, several small scattered spines on posteromesial surface; merus with 8 spines on lateral surface, 7 on mesial surface; ischium with 2 spines on posterior surface. Pereopod 5 overreaching scaphocerite by dactylus and $\frac{3}{5}$ of propodus; dactylus $\frac{1}{9}$ length of propodus; carpus with single lateral spine at about midlength; merus with 8 posterolateral spines, and single mediodistal spine; ischium unarmed.

Pleopod 1 in male, (Fig. 3c) endopod about $\frac{1}{2}$ length of exopod, distally broadened, with low mesial lobe bearing hooks; distal and lateral margins setose. Pleopod 2 (Fig. 3d) in male, appendix interna and appendix masculina subequal in length; appendix interna with distal triangular area bearing hooks; appendix masculina bearing about 25 spines of varying lengths on distal and lateral margins. Outer ramus of uropod (Fig. 3b) with groove on outer surface proximally well defined, becoming obsolete distally; distolateral fixed spine at distal $\frac{3}{4}$; both rami just falling short of telsonic apex.

Remarks.—Several differences between Milne Edwards' figure (1883) and the Virgin Islands material are noted:

The stylocerite is shorter in the original figure, than in the present material; no spines are shown on the merus of pereopod 5; the uropodal rami overreach the telsonic apex by a short distance; the scaphocerite is shown as being parallel-sided for most of its length. In spite of these differences, the overall closeness in the general form, and the agreement in the number of articles in the carpi of the second pereopods, make the identity of the present material unmistakable.

Heterocarpus laevis is unusual in being the only species in the genus lacking lateral carapace carinae.

The present material was captured along with several specimens of *Plesionika edwardsii* and *Plesionika* sp.

Acknowledgments

Funds for the Virgin Islands Fishery Development and Demonstration Project were provided by the National Marine Fisheries Service under the Saltonstall-Kennedy Act.

We are grateful to Dr. F. A. Chace, Jr., Smithsonian Institution, for reading and commenting on a draft of the manuscript.

Literature Cited

- Faxon, W. 1896. Reports on the results of dredging, under the supervision of Alexander Agassiz, in the Gulf of Mexico and the Caribbean Sea, and on the east coast of the United States 1877 to 1880, by the U.S. Coast Survey Steamer "Blake," Lieut.-Commander C. D. Sigsbee, U.S.N., and Commander J. R. Bartlett, U.S.N., commanding. 37. Supplementary notes on the Crustacea.—*Bulletin of the Museum of Comparative Zoology at Harvard College* 30(3):153–166.
- Man, J. G. de. 1920. The Decapoda of the Siboga Expedition. Part 4. Families Pasiphaeidae, Styrodactylidae, Hoplophoridae, Nematocarcinidae, Thalassocarididae, Pandalidae, Psalidopodidae, Gnathophyllidae, Processidae, Glyphocrangonidae, and Crangonidae.—*Siboga-Expeditie, monographie* 39a3:1–318.
- Milne Edwards, A. 1883. *Recueil de figures de Crustacés nouveaux ou peu connus.*—Paris, April 1883. 44 Pls.

(BK) Department of Invertebrate Zoology, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560; (WT) Department of Conservation and Cultural Affairs, Division of Fish and Wildlife, Box 1878, Frederiksted, St. Croix, U.S. Virgin Islands 00840.